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REMARKS

These remarks follow the order of the paragraphs of the office action. Relevant portions of the office action are shown indented and italicized.

DETAILED ACTION

1. Claims 1-23 remain pending in this examination. Claims 15-17, and 21 remain withdrawn as being drawn to a non-elected invention.

Claim Rejections -35 USC § 112

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 3 recites the limitation "the application protocol" which lacks antecedent basis.

In response, applicant respectfully states that claim 3 is amended to provide the antecedent basis required. This overcomes the rejection of claim 3 under 35 U.S.C. 112.

Claim Rejections - 35 USC § 102

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
Claims 1-4, and 18-20,22, and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Taylor et al. (USPN 6,726,886).

6. Referring to claim 1, Taylor discloses a method comprising differentiating at least one service class in a kernel to perform service differentiation based on content in at least one data packet, including the steps of:
capturing at least one data packet until a complete application header is detected (an inherent feature of capturing a packet at a NIC as disclosed in Taylor is that an application header is also captured) (col. 5, lines 30-32);

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Parsing said complete application header to determine at least one application tag (i.e. attribute information such as source and destination address which are contained in the application header) (col. 6, line 15-17)
Matching said at least one application tag to at least one matching rule (col. 6, lines 32-37);
Determining a presence of at least one match with said at least one matching rule (i.e. checking the relevant information on the SYN packet sent by DPF 207) (col. 6, lines 32-37; col. 10, line 57 to col. 11 line 10); and
Performing service differentiation (i.e. discarding packet if determined not to allow connection or creating a new connection and applying the corresponding rule to any subsequent packets from that connection until the connections disconnected) (col. 6, lines 61 -65).

In response, applicant respectfully states that amended claim 1 reads:

A method comprising:

employing at least one system for differentiating at least one service class in a kernel using service differentiation to provide different levels of quality of service for system performance to users to perform service differentiation based on content in at least one data packet for connections accepted in said at least one system, including the steps of:

capturing said at least one data packet until a complete application header is detected;

parsing said complete application header to determine at least one application tag;

matching said at least one application tag to at least one matching rule;

determining a presence of at least one match with said at least one matching rule; and

performing service differentiation action based on said at least one matching rule in order to provide a particular level of service from said different levels of service.

This includes the clarification of claim 1, as agreed to with the Examiner. Thus, claim 1 was further amended to better describe and protect the present invention. Claim 1 now shows that the method includes employing at least one system for differentiating at least one service class in a kernel using service differentiation to provide different levels of quality of service for system performance to users to perform service differentiation based on content in at least one data packet for connections accepted in the system. It is noted, that Taylor performs the above referenced steps not to perform service differentiation but to provide security to the system thus the only action they describe is shown in Figure 4 item 315 and claim 6, discarding the first packet if the connection is not approved, a security action. The present Freimuth et al patent provides methods and performs operations on packets for the purpose of providing different performance levels in the system based on service classes. This is shown by the rule table in Figure 5 that shows multiple actions to prioritize, schedule, rate control, monitor and drop packets to provide better performance to higher class services. For example figure 406 describes placing connection requests in the accept queue in a prioritized order so that packets from higher priority service classes are serviced first. The background of the invention mentions a preferred gold class of service, this gets to the intent of providing service differentiation for example in a system with gold, silver and bronze classes of service. Taylor apparently does not perform the step of differentiating at least one service class in a kernel using service differentiation to provide different levels of quality of service for system performance to users to perform service differentiation based on content in at least one data packet for connections accepted in the system. Claim 1 as amended shows more specifically that it is directed, to provide different levels of quality of service for system performance to users perform service differentiation based on content in at least one data packet, for connections accepted in the system. Thus claim 1 and all claims that depend upon it are certainly allowable.

7. Referring to claim 2, Taylor discloses the application tag includes a request method (i.e. filter to all "telnet" packets) (col. 6, lines 28-30).

Applicant respectfully states that claim 2 includes, wherein said at least one application tag includes at least one tag taken from a group of tags including: URI, cookie, request method, HTTP version, a tag in an application protocol, and a tag in a communication protocol. This is

not the so called *application tag of Taylor which includes a request method (i.e. filter to all "telnet" packets)*. Claim 2 gives details about rules for web applications and how different levels of quality of service can be provided like preferred gold, silver, bronze for a web user. Taylor is filtering for security purposes and this is not claim 2. Thus claim 2 is allowable for itself and because it depends on allowable claim 1.

> *8. Referring to claim 3, it is an inherent feature in HTTP that the URI is the second string in the HTTP header, (the first string is the action word, such as GET POST HEAD SYN, etc.).*

Applicant respectfully states that claim 3 serves the purpose of claim differentiation to broaden claim 1 upon which it depends. Thus claim 3 is allowable for itself and because it depends on allowable claim 1.

> *9. Referring to claim 4, Taylor discloses employing a table having at least one matching rule (col. 6, lines 53-57).*

In response, applicant respectfully states that the table used for matching in claim 4 is employed to determine a level of service of claim 1. This not Taylor's table allegedly having at least one matching rule. Thus claim 4 is allowable for itself and because it depends on allowable claim 1.

> *10. Referring to claims 5, Taylor discloses finding a best match (i.e. a rule which best fits the packet, such as the type of protocol used) (col. 6, lines 25-43).*

Applicant respectfully states that the matching of claim 5 is employed to determine a level quality of service of claim 1. This not the best match of Taylor. Thus claim 5 is allowable for itself and because it depends on allowable claim 1.

> *11 Referring to claim 6, Taylor discloses service differentiation includes dropping (i.e. discarding a packet) (col. 6, lines 61-65).*

Applicant respectfully states that the actions of claim 6 refer to provisioning level quality of service of claim 1. Thus claim 6 is allowable for itself and because it depends on allowable claim 1.

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12. Referring to claim 7, Taylor discloses dropping includes discarding a connection (i.e. do not allow a connection) (col. 6, lines 61-65).

Applicant respectfully states that the actions of claim 7 refer to provisioning level quality of service of claim 1. Thus claim 7 is allowable for itself and because it depends on allowable claim 1.

13. Referring to claim 8, Taylor discloses said action includes protocol control (i.e. setting up a new connection (col. 6, lines 61-65).

Applicant respectfully states that the actions of claim 8 refer to provisioning level quality of service of claim 1. Thus claim 8 is allowable for itself and because it depends on allowable claim 1.

14. Referring to claim 9, Taylor discloses installing at least one matching rule *(col. 6, lines 44-57).*

Applicant respectfully states that the actions of claim 9 refer to provisioning level quality of service of claim 1. Taylor apparently does not disclose installing at least one matching rule as in claim 9. Thus claim 9 is allowable for itself and because it depends on allowable claim 1.

15. Referring to claims 10 and 11, Taylor discloses detecting establishment of a new TCP connection (col. 6, line 60 to col. 7, line 10).

Applicant respectfully states that the actions of claims 10 and 11 refer to provisioning level quality of service of claim 1. Thus claims 10 and 11 are allowable for themselves and because each depends on allowable claim 1.

16. Referring to claim 12, Taylor discloses the step of establishing a new TCP connection includes receiving a SYN packet, sending a SYN-ACK packet, deferring accept, receiving ACK for SYN-ACK and deferring notification of data packet (this is an inherent feature of the HTTP basic 3-way handshake for Connection synchronization which can be found in the Transmission Control Protocol DARPA Internet program Protocol Specification September 1981 prepared by Information Sciences Institute, USC, page. 31 Figure 7) (col. 5, lines 55-60).

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Applicant respectfully states that the actions of claim 12 refer to provisioning level quality of service of claim 1. Thus claim 12 is allowable for itself and because it depends on allowable claim 1.

17. Referring to claim 13, detecting application header delimiters for said data packet is an inherent feature of Taylor since without this detection step, the system would not know where the header starts and ends.

Applicant respectfully states that the actions of claim 13 refer to provisioning level quality of service of claim 1. Thus claim 13 is allowable for itself and because it depends on allowable claim 1.

18. Claims 14, and 18-20, 22, and 23 are rejected for similar reasons as stated above.

In response, applicant respectfully states that claim 14 as amended reads:

An apparatus comprising a service differentiation module employing at least one system for differentiating at least one service class in a kernel using service differentiation to provide different levels of quality of service for system performance to users for connections accepted in said at least one system, said module including a tangible computing medium enabling functions of:

a parser to parse a client Web request;

a classifier to classify the request based on application headers and assigning a request class within a kernel;

a selector to determine an action rule based on the request class; and

a performer to apply the action rule based on the request class in order to provide better system performance for higher classed packets and connections.

This includes the clarification of claim 14, as agreed to with the Examiner. Thus, claim 14 was further amended to better describe and protect the present invention. Claim 14 now shows that the method includes employing at least one system for differentiating at least one service class in a kernel using service differentiation to provide different levels of quality of service for system performance to users to perform service differentiation based on content in at least one data packet for connections accepted in the system. It is noted, that Taylor performs the above referenced steps not to perform service differentiation but to provide security to the system thus the only action they describe is shown in Figure 4 item 315 and claim 6, discarding the first packet if the connection is not approved, a security action. The present Freimuth et al patent provides methods and performs operations on packets for the purpose of providing different performance levels in the system based on service classes. This is shown by the rule table in Figure 5 that shows multiple actions to prioritize, schedule, rate control, monitor and drop packets to provide better performance to higher class services. For example figure 406 describes placing connection requests in the accept queue in a prioritized order so that packets from higher priority service classes are serviced first. The background of the invention mentions a preferred gold class of service, this gets to the intent of providing service differentiation for example in a system with gold, silver and bronze classes of service. Taylor apparently does not perform the step of differentiating at least one service class in a kernel using service differentiation to provide different levels of quality of service for system performance to users to perform service differentiation based on content in at least one data packet for connections accepted in the system. Claim 14 as amended shows more specifically that it is directed, to provide different levels of quality of service for system performance to users perform service differentiation based on content in at least one data packet, for connections accepted in the system. Thus claim 14 and all claims that depend upon it are certainly allowable.

Claim 22 is allowable over Taylor for the same reason.

Claim 22 as amended reads:

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22. (currently amended) An apparatus comprising a computing medium enabling at least one function of:

means for employing at least one system for differentiating at least one service class in a kernel to perform service differentiation based on content in at least one data packet for connections accepted in said at least one system, comprising:

means for capturing said at least one data packet until a complete application header is detected;

means for parsing said complete application header to determine at least one application tag;

means for matching said at least one application tag to at least one matching rule;

means for determining a presence of at least one match with said at least one matching rule; and

means for performing quality of service differentiation action based on said at least one matching rule.

Thus claim 22 also includes the clarification of the invention as agreed to with the Examiner. Claim 22 was further amended to better describe and protect the present invention. Claim 22 now shows that the method includes employing at least one system for differentiating at least one service class in a kernel using service differentiation to provide different levels of quality of service for system performance to users to perform service differentiation based on content in at least one data packet for connections accepted in the system This is not in the cited art and claim 22 and all claims that depend upon it are certainly allowable.

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It is anticipated that this amendment brings the application to allowance of claims 1-14 and 18-20, 22, and 23 . Favorable action of allowance of these claims is respectfully solicited.

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Respectfully submitted,

By: Louis Herzberg

Dr. Louis P. Herzberg
Reg. No. 41,500
Voice Tel. (845) 352-3194
Fax. (914) 945-3281

Customer Number: 54856

3 Cloverdale Lane
Monsey, NY 10952